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CONFERENCE FOR EXCHANGE OF EXPERIENCE IN USE OF AUTOMATIZED TELEGRAPH COMMUNICATIONS

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A conference of workers of telegraph enterprises convened in Minsk for the purpose of exchanging experience in the use of automatized communications and for the purpose of developing on the basis of this experience concrete recommendations for further improvement of telegraph operation. The conference was attended by representatives of 25 oblast, kray, and republic telegraph centers of the RSFSR, Belorussia, the Ukraine, Latvia, Lithuania, and Estonia, as well as by workers of the Central Scientific Research Institute of Communications and representatives of the Ministry of Communications USSR, the republic ministries of communications and the Ministry of Radio Engineering Industry USSR.

The conference heard and discussed reports on methods for further technical progress in telegraph communications facilities and on experience in the automatization and mechanization of production processes at a number of telegraph enterprises. The conference noted that during the last five-year plan considerable technical re-equipment of telegraph communications enterprises was achieved. The number of start-stop teletypewriters in operation was increased by 70 percent, the number of voice-frequency-carrier telegraph channels was increased by 51 percent. The installed capacity of subscriber telegraph exchanges rose by 140 percent. In the last year 110 million telegrams were handled by automatized communications. In the first six months of this year automatized message handling was twice that of the first six months of 1954. It is important to note that automatic processing of telegrams not only permitted an increase in the productivity of labor of telegraph operators but also increased the rate at which telegrams were handled.

Those attending the conference heard a report by Engineer M. P. Studitovaya of GUMTTS [Main Administration of Intercity Telegraph and Telephone Communications] on a system of automatic transceiving of telegrams with code switching now under development. The mentioned system provides for automatic transmission of telegraph correspondence through an automatized unit. In addition, part of the equipment of the unit will not require constant attendance, which will further increase the rate of handling of telegrams. According to preliminary estimates the productivity of labor will be increased by 3.5-4 times. This is to be achieved not merely by automatizing the process of transceiving telegrams but also by automatizing many auxiliary processes (collation of serial numbers at the receiver, automatic scanning of telegram addresses, determining the transmission sequence of telegrams according to categories, etc). It is necessary that engineering and technical workers become thoroughly acquainted with the techniques of code switching at this time and that they submit proposals for improving the operating of the given system.

In noting the substantial achievements in the field of automatization of transceiving of telegrams and in endorsing, for the most part, the technical policy of the Ministry of Communications USSR for the development and improvement of telegraph communications facilities the conference at the same time called attention to a number of serious shortcomings. Thus, the plants of the Ministry of Radio Engineering Industry USSR are producing ST-35 [start-stop teletypewriter] equipment and automatic control

devices of low quality, which reduces the effectiveness of automatization and hinders the campaign to eliminate spoilage in processing telegrams. The exceptionally poor quality of the ST-35 equipments explains, for example, the necessity for replacement of components of the dialing mechanism in new equipment after a few months of operation. Each unit received from the plant must be repaired an average of 18 times per year. The participants in the conference emphasized that the workers of the Ministry of Communications USSR, in spite of numerous complaints, have still not drawn the proper conclusions from the decisions of the July Plenum of the TsK KPSS [Central Committee of the Communist Party of the Soviet Union] and continue to deliver obsolete equipment of poor quality. As a result, not only is the introduction of new, advanced equipment hindered, but the normal operation of telegraph communications is often completely disrupted.

Substantial shortcomings in the automatization of operations at a number of telegraph centers were also noted. Experience has shown that the productivity of labor in automatized communications can be considerably increased with proper organization of the telegraph operator's working position. The participants in the conference introduced a proposal to change the design of the operator's desk so that one operator can attend to two instruments; at the same time provision should be made for the possibility of two telegraph operator's working independently at one desk.

The conference pointed out that the combined method of automatization, in which some of the telegrams are transmitted automatically and others are transmitted manually, does not promote an increase in the productivity of labor. Hence, at those telegraph centers which are equipped with various apparatus it is necessary to achieve complex automatization in order that all telegrams may be processed automatically, regardless of the type of apparatus installed at the telegraph center. In this connection the conference examined in detail the problem of the application of code converters and approved several proposals of great practical interest.

The first of these proposals, introduced by the workers of the Minsk telegraph center, dealt with automatization of Morse communication and adapting it to use with automatization of the ST-35 equipment. A simple converter is already in use in Minsk to convert the code signals of the ST-35 to Morse code. This converter is based on the Creed perforator. Telegrams addressed to the rayon centers are received here on perforator tape with conversion to Morse code and are then transmitted further on a Creed transmitter. Telegrams from the rayon centers are received on Morse equipment.

Moreover, by means of a tape-transport mechanism the tape is fed to the desk of an STA [start-stop] unit which permits the telegraph operator to immediately perforate the tape for the ST-35 code. The latter is fed further to the automatized communications transmitter. The described system together with the Morse concentrator considerably speeds up the movement of telegrams from Morse communications to communications facilities equipped with ST-35 units and vice versa. Engineer R. S. Brazhenos of the Minsk telegraph center submitted interesting proposals for the development of relay converters to convert Morse signals to ST-35 signals and vice versa. It is necessary to press for the development of these code converters in order to accelerate the complex automatization of telegraph communications.

The second important proposal in the field of automatization calls for the conversion of Baudot apparatus for operation on the ST-35 code. Essentially the proposal consists in equipping the Baudot apparatus with type wheels with engraved characters corresponding to the ST-35 code. At the same time it will be necessary for several telegraph operators to re-learn manipulation of the keyboard. As experience at several telegraph centers has shown, such re-learning by the telegraph operators presents no special difficulty. Along with this, conversion of communications facilities provided with Baudot apparatus to the ST-35 code makes possible a sharp increase in automatized traffic without considerable expenditures in the manufacture of special code converters, without the introduction of an additional step in the handling of telegrams, and without complicating operation.

The conference disclosed the basic reasons why at a number of telegraph centers success has not been had in transceiving telegrams with inter-exchange transit. Experience has shown that without furnishing telegraph centers with special units for load balancing or with high-speed transmitters and reperforators a system of automatization with pushbutton switching is hardly effective and does not insure full use of outgoing communications channels. At the same time introduction at large telegraph centers of a system of automatized transceiving of telegrams with the tearing and transfer of tape causes much inconvenience due to the necessity of carrying the perforated tape over considerable distances, often from one floor to another. Hence, every effort must be made to speed up the work of developing a new, advanced scheme of automatized transceiving of telegrams with inter-exchange transit which will insure the maximum use of outgoing channels.

Many of the persons speaking at the conference noted the disparity between outmoded methods of operation and new techniques of processing telegraph correspondence. It is absolutely necessary that automatization of the transceiving of telegrams be accompanied by the introduction of the most advanced and simplest methods of accounting and control. Technologically the processing of telegrams must guarantee the possibility of a rapid rise in the productivity of labor. The conference discussed many of the problems dealing with simplification of documentation and adopted suitable recommendations. Unquestionably of interest is the introduction of a single control form in automatized communications and the simplified method used at the Minsk telegraph center in affixing the tape to the form. Previously, before the introduction of the single control form, it was necessary, according to the category of the received telegram, to fasten the tape to different forms or to affix labels of different colors. This called for a constant supply of labels and adhesive at the work positions. With the introduction of a single form the processing of telegrams in automatized communications is considerably simplified -- the category of the received telegram is indicated on the edge of the form by a notch made with a special punch. Instead of making detailed entries in the equipment logs, the telegraph operator now simply enters therein the hourly totals (that is, the number of telegrams transmitted during the hour elapsed) and the total number of telegrams transmitted since the beginning of the 24-hour period.

The conferees criticised the existing method of auxiliary instruction in maintaining automatized communications. This instruction has been changed in sections so that the attention of the telegraph operator is called primarily to the quality of telegraph reception. If the high quality of telegram reception is insured, then with the equipment in good working order high-quality transmission will also be insured.

In the short time at its disposal the conference could not, of course, develop exhaustive recommendations for simplification of operation. Hence it is necessary that telegraph communications workers, in critically appraising existing methods of operation, relentlessly continue to seek new and effective solutions in the field of simplification of the structure of accounting and control, and in the mechanization of individual production processes and operations.

At the conclusion of the conference I. V. Klokov, speaking for the Minister of Communications USSR, delivered an address. He pointed out that the rate of introduction of automatic operation at telegraph enterprises is inadequate. A sharp improvement in the quality of telegraph communications calls for enormous work in increasing the number of direct links and more rapid introduction of facilities for automatization. The telegraph centers possess many reserves which must be fully utilized in the near future. For example, for every two telegraph operators we must have one auxiliary worker. Whence it follows that many unnecessary auxiliary operations are performed at telegraph centers while those operations which are actually necessary are performed by hand without the use of facilities for automatization and mechanization. Comrade Klokov called upon the workers of telegraph communications, the innovators, and rationalizers to analyze carefully the production activity of the enterprises, to display more initiative in exposing and utilizing internal reserves, and to strive for the utmost improvement of apparatus and equipment.

The communications workers of Belorussia, said Comrade Klokov, are confronted with the task of completing the automatization of telegraph communications within their republic during 1956. There is every possibility for the achievement of this task. The Ministry of Communications will provide the necessary assistance. The communications of other republics must give serious attention to the problems of further introduction of automatic control, keeping in mind the necessity for the most rapid transition from the automatization of individual production processes to the automatization and mechanization of all the basic processes in the handling of telegrams.

The conferees took an active part in the work of the sections. The section meetings discussed the technical and operational servicing of telegraph communications and prepared concrete recommendations to facilitate the further development and improvement in automatizing the transceiving of telegrams.

The Ministry of Communications has issued an instruction listing measures for realization of the recommendations adopted by the conference. The Main Administration of Telegraph and Telephone Communications must assist the telegraph centers in further development of automatization and mechanization of production processes, in generalizing, selecting, and disseminating all that is valuable, advanced, and progressive, and in the maximum utilization of production reserves.

Telegraph enterprises, the Central Scientific Research Institute of Communications, the union and republic ministries of communications are confronted with great and important tasks in the improvement and introduction of automatized methods of processing telegrams with push-button and code switching, in the transition to complex automatization and mechanization of production processes, in further expanding the network of subscriber telegraph, and in the development and improvement of phototelegraphic methods of handling telegrams. These problems will be successfully solved if the hundreds of innovators, specialists, and workers of scientific research institutes and industry will but apply themselves.

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There is no doubt that realization of the recommendations formulated at the conference will contribute to progress in telegraph communications facilities.

PHOTO CAPTION

Group of participants in the conference for exchange of experience in the use of automatized communications. From left to right: Comrade Leushev (chief engineer Murmansk Telegraph Center), Comrade Marinin (senior technician Riga Telegraph Center), Comrade Nysad (leader Tallin Telegraph Center), Comrade Shchekin (senior engineer Leningrad Telegraph Center), Comrade Pavlov (engineer Leningrad Telegraph Center), Comrade Brazhenas (engineer Minsk Telegraph Center), Comrade Korostelin (service leader Kuybyshev Telegraph Center), Comrade Nekrasov (chief engineer Krasnodar Telegraph Center), Comrade Golovanevskiy (service leader Minsk Telegraph Center), Comrade Behman (chief engineer Gomel' Joint Communications Office), Comrade Arakelyants (senior engineer Rostov Telegraph Center), and Comrade Davydov (engineer Khabarov Telegraph Center).